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RECORD OF ORAL HEARING  
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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex Parte* JOCHEN ACKERMAN, HORST HILTNER and  
HERMAN SIEGERT

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Appeal 2009-011372  
Application 10/541,307  
Technology Center 1600

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Oral Hearing Held: June 23, 2010

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Before CAROL A. SPIEGEL, TONI R. SCHEINER and  
FRANCISCO C. PRATS, *Administrative Patent Judges.*

APPEARANCES:

ON BEHALF OF THE APPELLANT:

JACOB A. DOUGHTY  
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1           THE USHER: Calendar No. 73; Appeal No. 2009-011372; Mr.  
2 Doughty.

3           MR. DOUGHTY: May I approach the reporter?

4           COURT REPORTER: Yes, please.

5           MR. DOUGHTY: Thanks.

6           JUDGE SPIEGEL: Hi. Good afternoon. We're here for oral  
7 arguments in Appeal No. 2009-011372, Application No. 10/541,307, in the  
8 matter of Ex Parte Ackerman, A-C-K-E-R-M-A-N. If counsel would like to  
9 introduce himself. You have 20 minutes, and may begin whenever you're  
10 ready.

11          MR. DOUGHTY: Thank you. May it please the Board, my name is  
12 Jacob Doughty, and I represent Jochen Ackerman and his coinventors, who  
13 are the Appellants in this matter.

14          Your Honors, all the pending claims are directed to processes for  
15 preparing higher methacrylic esters in a plant that includes a reaction  
16 apparatus and a film evaporator for separating a highly pure ester product  
17 and/or a vacuum evaporation stage for receiving a bottom product remaining  
18 after separation of a highly pure ester product. So, those two -- the last two  
19 of those devices that I mentioned and different permutations in the claim.  
20 So, for example, Claim 1 includes the film evaporator, Claim 2 includes the  
21 film evaporator and the vacuum evaporation stage, and Claim 3 includes the  
22 vacuum evaporation stage, and the same things happening in Claims 20 to  
23 22. The processes all focus --

24          JUDGE PRATS: I'm sorry. Back it up. Claim 1 is a vacuum  
25 evaporator, Claim 2 is a film evaporator, and Claim 3 is the combination,  
26 correct?

1           MR. DOUGHTY: So, Claim 1 is vacuum evaporation stage, Claim 2  
2 is film evaporator, and Claim 3 is both. I apologize if I muffed that up on  
3 the first time through.

4           JUDGE PRATS: That's all right. I just had them right in front of me.  
5 And 20-22 do the same thing.

6           MR. DOUGHTY: Exactly

7           JUDGE PRATS: Except for you have the other permutation of direct  
8 recycling?

9           MR. DOUGHTY: Right, right. So, Claims 1 to 3 require a step of  
10 selecting a proportion of bottom effluent that's going to be recycled based on  
11 current catalyst activity, and then Claims 20-22 require that the recycled  
12 portion of the bottom effluent be recycled directly to the reaction apparatus.  
13 So, those are -- there's six independent claims and their permutations on that.  
14 So, although the grounds of rejection were narrowed somewhat in the  
15 Examiner's Answer, there remain rejections under 35 U.S.C., Section 112,  
16 first paragraph; 35 U.S.C. Section 112, second paragraph; and a rejection  
17 under a 35 U.S.C., Section 103 over the Geisendoerfer reference.

18          With respect to the rejection under 112, first paragraph, the Examiner  
19 asserts that the specification doesn't support the recitation of recycle directly  
20 to the reaction apparatus in Claims 20 to 22. Claims 20 and 22 recite  
21 dividing a bottom effluent from the vacuum evaporation stage directly to the  
22 reaction apparatus. And for support for this particular feature, I'd direct  
23 attention to Claim -- to Figures 2 and 4 of the present specification, which  
24 show embodiments of Claims 20 and 22 in which at least a portion of the  
25 bottom product, which is denoted by 18 in the figure, from the vacuum  
26

1 evaporation stage flows unimpeded without encountering another apparatus  
2 to the reaction apparatus, which is denoted by 1 in Figures 2 and 4.

3       With respect to Claims 21 and 22, they recite dividing a bottom  
4 effluent from the film evaporator and then directly recycling that back to the  
5 reaction apparatus, and the Examiner raises a more interesting point with  
6 respect to this feature in Claims 21 and 22. Namely, if you look at Figure 3,  
7 for example, of the present specification, you can see a configuration in  
8 which there are two -- there is -- there are two devices. One device is the  
9 Device 5, which is a gentle -- in some places it's referred to as a gentle film  
10 evaporator, and other places it's referred to as a thin film evaporator. And  
11 the Examiner rightly points out that this particular device in the reaction  
12 schemes that are shown in the figures, the bottom product doesn't go directly  
13 back to the reaction apparatus. However, the thing that I just wanted to  
14 point out is that in the specification, and in the description of the prior art, as  
15 well, the Devices 4 and 5 are taken together, and referred to as a vacuum  
16 distillation stage. And so, our position is that it's these combined devices  
17 from which there is a direct recycling back to the reaction apparatus.

18       Turning to the rejection under 112, second paragraph, the Examiner  
19 asserts that the term current catalyst activity is indefinite because it can be  
20 interpreted in various ways. Our position with respect to this assertion is  
21 that seems to us to be more an objection to the breadth of the claim as  
22 opposed to its indefiniteness. And there's a particular passage in the present  
23 specification that I'd like to sort of direct attention to, and that's at page 13,  
24 lines 7 to 13, and it states, and I quote, "The amounts of catalyst which is  
25 recycled is controlled with the aid of alcohol (B), or methyl methacrylate (A)  
26 conversion, and the reaction apparatus (1) as a measure of the current

1 catalyst activity, a further indicator which can be used for the current  
2 catalyst activity, is the amount and composition of the low boiler cycle  
3 stream (14)." And so, basically, this is explaining that the amount of  
4 recycling that's going on in the process, the amount of the bottom product  
5 from either the vacuum evaporation stage or the film evaporator is  
6 determined based on the current catalyst activity, and it gives a couple of  
7 examples of how you could measure that.

8 JUDGE PRATS: If I could interject, then?

9 MR. DOUGHTY: Sure.

10 JUDGE SCHEINER: None of Claims 1 to 3 actually require  
11 measuring it -- actually recite measuring current conversion in the reaction.

12 MR. DOUGHTY: That's true. That's true.

13 JUDGE PRATS: But it sounds like what you're saying is that, by  
14 saying based on current catalyst activity, you pretty much have to measure  
15 that, at least if you read the claims in light of the specifications, correct?

16 MR. DOUGHTY: Yes, I believe that that's correct. And not limiting  
17 it to any particular type of measurement, however, is the point that I'm trying  
18 to make.

19 JUDGE PRATS: I think you disclosed three things, you know, the  
20 amount of product -- excuse me, the amount of reactant that remains, and  
21 also the amount of product that's made.

22 MR. DOUGHTY: Right. Turning to the obviousness rejection over  
23 Geisendoerfer, the first thing I'd like to point out is that the Examiner's  
24 arguments are focused on the feature K-4 in Geisendoerfer. So, if you look  
25 at Figure 1 in Geisendoerfer, there's discussion of -- you can see, basically  
26 near the middle of the diagram, probably the third structure from the right-

1 hand side of the figure, there is K-4, and this is -- in paragraph 167 of  
2 Geisendoerfer, they're referring to taking a -- mixture and subjecting it to  
3 distillation rectification, preferably a thin film or flash evaporation. And this  
4 feature that the Examiner's pointing to, if you look at that figure, you can see  
5 basically that they're directly recycling the bottom product from K-4 back to  
6 the reaction apparatus. So, this is the point that the Examiner's trying to  
7 make, that by taking the bottom product from this particular device back to  
8 the reaction product, that it's teaching what's going on in the present claims.  
9 And the thing that I'd like to point out is, in our claims, we're referring to a  
10 different apparatus than this.

11 So, if you look at Geisendoerfer, at paragraph 175, for example, and  
12 this is talking about what is resulting, what is left after the treatment in the  
13 device K-4, okay? And, if you look at it, it says that it mainly comprises 85  
14 to 95 percent of the desired ester, okay? And the point that we wanted to  
15 make was that if you look in the preamble of the claims of the present  
16 application, Claims 1 to 3 and 20 to 22, what they're doing is -- the two  
17 devices from which we're looking at the bottom product, in terms that that's  
18 being recycled to the reaction apparatus, so, basically, it says a plan  
19 comprising a reaction apparatus and -- for example, in Claim 1 I'm talking  
20 about now -- and a vacuum evaporation stage for receiving a bottom product  
21 remaining after separation of a highly pure ester product. So, the thing -- the  
22 mixture that is going into the vacuum evaporation stage of Claim 1 is a  
23 highly pure ester product. And if you look at Claim 2, which is the other --  
24 the alternative device, it's talking about a film evaporator for separating a  
25 highly pure ester product.

26 JUDGE PRATS: If I could interject?

1           MR. DOUGHTY: Sure.

2           JUDGE PRATS: Isn't that what K-4, which can be a film evaporator,  
3 isn't that a film evaporator for separating a highly pure ester product? Isn't  
4 that the ultimate goal in Geisendoerfer?

5           MR. DOUGHTY: The point that I wanted to make was, if you look  
6 at, for example -- that's description -- so that's -- if you look at paragraph 166  
7 of Geisendoerfer, this is the section for catalyst removal, and that's where the  
8 device K-4 is described. Now, if you go to the next -- two more sections  
9 down, you go to Section 7, which is distillation of the pure ester, okay, that's  
10 at paragraph 181. And so, what's happening is, you're getting this product  
11 which is called in the context of the present specification, at best, a crude  
12 ester product, that is what the product is of the K-4; that's what you get after  
13 the K-4 is completed.

14          JUDGE PRATS: I understand what you're saying, and it seems to me  
15 you're trying to differentiate, and I'm focusing more on Claim 21 here,  
16 because 21 goes to this K-4, or the effluent from K-4 is arguably recycled  
17 directly back. So, back to the reaction chamber, and that's conceded on the  
18 record, it seems to me.

19          MR. DOUGHTY: Okay, can you -- I'm sorry, I missed your -- can  
20 you repeat the point?

21          JUDGE PRATS: So, K-4 does recycle -- K-4, which is a, preferably,  
22 a film evaporator, recycled that effluent, at least part of it is recycled directly  
23 back to the reaction. So, it just sounds -- seems to me that you're trying to  
24 distinguish K-4, which is arguably a film evaporator, from your claim with  
25 respect to this intended use recitation in the preamble, correct?

26

1           MR. DOUGHTY: Well, I don't think it's an intended use because it's  
2 actually defining features that are recited in the body of the claim. So, we're  
3 talking about, I mean --

4           JUDGE PRATS: Well, where does the claim -- what -- why is this  
5 effluent not highly purified? It contains 80 to 95 percent, arguably, of the  
6 desired product, correct?

7           MR. DOUGHTY: It does include 85 to 95 percent; that's what  
8 Geisendoerfer discloses. And what I'm trying to argue is that, in the context,  
9 if you look at the disclosure of the present specification, and sort of what we  
10 would argue one of ordinary skill in the art would understand, is that 80 to  
11 95 percent is not a highly pure ester product; that this is a crude ester  
12 product, and that's how it's discussed in the context of the present  
13 specification. So, if you look at what's going on in Geisendoerfer, there are  
14 further steps after the step in K-4. I mean, there's the K-6 and K-7 reactions  
15 in which they are actually upping the purity and obtaining this product. And  
16 if you look at the bottom product from that reactor, I think it's the K-7  
17 reactor in -- or K-6, pardon me, in Geisendoerfer, that bottom product is not  
18 recycled directly. So, when you have these two devices, one device that's,  
19 you know, performing the function that's analogous to the function in the  
20 present claims, they're not directly recycling; they're working up that bottom  
21 product. And our position is that, basically, by virtue of, you know, which  
22 reactor they're taking the bottom product from and directly recycling in  
23 Geisendoerfer, that you could jump to the conclusion, or, you know,  
24 likewise, you wouldn't necessarily conclude that you could do the same  
25 thing with the K-6 reactor in Geisendoerfer, because clearly they don't.

26

1           JUDGE PRATS: So you're saying, essentially, that the only  
2 evaporator that recycles highly-purified ester is K-6, then, in Geisendoerfer?

3           MR. DOUGHTY: I think --

4           JUDGE PRATS: And that K-6, if you look at it, actually sends that  
5 bottom product -- it does recycle it, but it sends that bottom product through  
6 a couple of processes, stages?

7           MR. DOUGHTY: Right. So there's a work-up of that bottom product  
8 before it goes back.

9           JUDGE PRATS: So, you're saying K-4 doesn't read on even though it  
10 does recycle it directly back?

11          MR. DOUGHTY: Yes, that's my position.

12          JUDGE PRATS: Thank you.

13          MR. DOUGHTY: Sure. Okay. So, basically, the discussion we had  
14 just sort of works out what's going on with Claims 20 to 22. The only other  
15 thing that I wanted to mention is with respect to Claims 1 to 3, and these are  
16 the claims that relate to selecting the amount of bottom product that's  
17 recycled based on current catalyst activity. And if you look at  
18 Geisendoerfer, even with respect to the reactor K-4, which, for the reasons I  
19 discussed before, I don't think is analogous as to what's going on in Claim 1,  
20 but they're talking about recycling an amount of 60 to 95 percent of this  
21 bottom product in the course of the reaction, and there's no indication of how  
22 or why that's selected. And basically, by affirmatively requiring that a  
23 selection be made based on current catalyst activity, it's our position that  
24 Geisendoerfer doesn't disclose or suggest doing that.

25          JUDGE PRATS: Well, arguably, Geisendoerfer is directed to  
26 minimizing the amount of catalyst that is subjected -- that is, once you get

1 the final product, you want to minimize the exposure of the desired product  
2 to the catalyst, and so at that point, you separate the catalyst off and recycle  
3 it back or, in effect, remove it, correct? So, why isn't that recycling, quote,  
4 based on catalyst activity, occurring catalyst activity?

5 MR. DOUGHTY: I think the best that you could take away from  
6 Geisendoerfer is that, you know, they're assigning some arbitrary amount  
7 and giving you no guidance on how to make a selection within that range, or  
8 at all, period. Whereas, the present claim is specifically requiring that you  
9 take into consideration a particular parameter in order to make a decision  
10 about how much of the bottom product is recycled. Are there any questions  
11 in addition to those questions?

12 JUDGE PRATS: No. Good. Thank you.

13 MR. DOUGHTY: Thank you very much.

14 JUDGE SPIEGEL: Thank you, sir. The case is under advisement.  
15 Whereupon, the proceedings, at 1:54 p.m., were concluded.

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